

## PATENT COOPERATION TREATY

## PCT

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 904420	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/JP2004/018967	International filing date (day/month/year) 13.12.2004	Priority date (day/month/year) 26.12.2003	
International Patent Classification (IPC) or national classification and IPC INV. B60K41/28			
Applicant TOYOTA JIDOSHA KABUSHIKI KAISHA et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 5 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  27.07.2005		Date of completion of this report  29.03.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840		Authorized officer  Tamme, H-M  Telephone No. +49 30 25901-542	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/JP2004/018967

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
  - ☐ international search (under Rules 12.3(a) and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4(a))
  - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-39 as originally filed

**Claims, Numbers**

1-22 received on 27.12.2005 with letter of 22.12.2005

**Drawings, Sheets**

1/10-10/10 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing *(specify):*
- ☐ any table(s) related to sequence listing *(specify):*

4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☒ the claims, Nos. 1, 12
- ☐ the drawings, sheets/figs
- ☐ the sequence listing *(specify):*
- ☐ any table(s) related to sequence listing *(specify):*

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/JP2004/018967

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	2-4, 13-15
	No: Claims	1, 5-12, 16-21, 22
Inventive step (IS)	Yes: Claims	
	No: Claims	1-22
Industrial applicability (IA)	Yes: Claims	1-22
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

- 1 Reference is made to the following documents:

D1: GB 2318106 A

D2: US 2002/0016659 A

- 2 The amendments filed with the International Bureau under Article 19(1) introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 19(2) PCT. The amendments concerned are the following:

*"A determination unit for determining driver's intention to avoid torque fluctuation involved with at least one sudden deceleration/acceleration and speed change".* This feature as presented in claims 1 and 12 is not disclosed by the original specification. According to Rule 70.2(c) PCT this examination is carried out as if the amendment has not been made.

- 3 With respect to claim 1, consequently, D1 discloses a vehicle integrated control system comprising: a plurality of control units (8, 9, 10, 11) controlling a running state of a vehicle based on a manipulation request; and a processing unit generating information to be used at said control unit and providing the generated information to each said control unit (8, 9, 10, 11); wherein said processing unit includes a calculation unit (implicit) for calculating information related to a control target to manipulate an actuator set in correspondence (figure 2) with each said control unit (8, 9, 10, 11) based on environmental information (3) around said vehicle and said manipulation request, and calculating information (implicit) for allotting a driving force (9) and a braking force (11) in said control unit (8, 9, 10, 11), based on information related to said calculated control target (implicit).

Thus, the subject-matter of claim 1 is not new.

- 3.1 With respect to independent claim 12, what has been said about claim 1 applies, *mutatis mutandis*, to claim 12 since the wording of the two claims is basically the same. Therefore, the subject-matter of claim 12 is not new.
- 4 Dependent claims 2 to 11 and 13 to 22 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows:
- 4.1 Concerning claims 2 to 4, the features are mere choices of generally well known restrictions in control systems without involving any surprising effect.
- 4.2 Referring to claims 5 to 9, the features are either already disclosed by D1 or obvious for a skilled person attaining environmental information.
- 4.3 Concerning claims 10 and 11, the features are already known from D1, pages 4 and 5.
- 4.4 Since the features of claims 13 to 22 are substantially identical with those of claims 2 to 11, what has been said in points 4.1 to 4.3 applies *mutatis mutandis* to claims 13 to 22.
- 5 An analog reasoning as given above may also be followed with document D2.

**Re Item VII**

**Certain defects in the international application**

- 1 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 is not mentioned in the description, nor are these documents identified therein.

**Re Item VIII**

**Certain observations on the international application**

- 1 The present application does not fulfill the requirements of Article 6 PCT in combination with Rule 6.1(a) PCT because of lack of conciseness of the present set of claims, see also PCT/GL/ISPE/1 Appendix to Chapter 5 "Conciseness". This, because the terms "unit" and "means" are substantially identical and by that the difference of the scope of the claims 1 to 11 and the scope of the claims 11 to 22 is rendered unclear.

EPO - DG 1

27.12.2005

(94)

## CLAIMS

- 1.(Amended) A vehicle integrated control system comprising:  
a plurality of control units (PT, ECB, STR) controlling a running state of a  
5 vehicle based on a manipulation request; and  
a processing unit generating information to be used at said control unit (PT, ECB, STR) and providing the generated information to each said control unit (PT, ECB, STR); wherein  
said processing unit includes  
10 a determination unit for determining driver's intention to avoid torque fluctuation involved with at least one of sudden deceleration/acceleration and speed change, and  
a calculation unit for calculating information related to a control target to manipulate an actuator set in correspondence with each said control unit (PT, ECB, STR), said control target being in accordance with an expected value of a driver based  
15 on determined said driver's intention, based on environmental information around said vehicle and said manipulation request, and calculating information for allotting a driving force and a braking force in said control unit (PT, ECB, STR), based on information related to said calculated control target.
- 20 2. The vehicle integrated control system according to claim 1, wherein said calculation unit calculates said information with priority being placed on a time for attaining said control target.
- 25 3. The vehicle integrated control system according to claim 1, wherein said calculation unit calculates said information with priority being placed on drivability.
4. The vehicle integrated control system according to claim 1, wherein

said calculation unit calculates said information with priority being placed on energy efficiency of said vehicle.

5            5.    The vehicle integrated control system according to claim 1, wherein said environmental information represents information on surroundings of the vehicle at present.

10           6.    The vehicle integrated control system according to claim 1, wherein said environmental information represents information on surroundings of the vehicle in future.

15           7.    The vehicle integrated control system according to claim 1, wherein said environmental information represents information on an acceleration/deceleration state of said vehicle.

            8.    The vehicle integrated control system according to claim 1, wherein said environmental information represents information sensed by a navigation device.

20           9.    The vehicle integrated control system according to claim 1, wherein said environmental information represents information sensed by a radar device.

25           10.   The vehicle integrated control system according to any one of claims 1 to 8, wherein said manipulation request is obtained by sensing an operated amount as to an accelerator manipulation and a brake manipulation by a driver.

            11.   The vehicle integrated control system according to any one of claims 1 to 8,



wherein

said manipulation request is obtained by sensing an operated amount as to an accelerator manipulation, a brake manipulation, and a transmission manipulation by a driver.

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12.(Amended) A vehicle integrated control system comprising:

a plurality of control units (PT, ECB, STR) controlling a running state of a vehicle based on a manipulation request; and

a processing unit generating information to be used at said control unit (PT, ECB, STR) and providing the generated information to each said control unit (PT, ECB, STR); wherein

said processing unit includes

means for determining driver's intention to avoid torque fluctuation involved with at least one of sudden deceleration/acceleration and speed change, and

calculation means for calculating information related to a control target to manipulate an actuator set in correspondence with each said control unit (PT, ECB, STR), said control target being in accordance with an expected value of a driver based on determined said driver's intention, based on environmental information around said vehicle and said manipulation request, and calculating information for allotting a driving force and a braking force in said control unit (PT, ECB, STR), based on information related to said calculated control target.

13. The vehicle integrated control system according to claim 12, wherein said calculation means includes means for calculating said information with priority being placed on a time for attaining said control target.

14. The vehicle integrated control system according to claim 12, wherein said calculation means includes means for calculating said information with

priority being placed on drivability.

15. The vehicle integrated control system according to claim 12, wherein  
said calculation means includes means for calculating said information with  
5 priority being placed on energy efficiency of said vehicle.

16. The vehicle integrated control system according to claim 12, wherein  
said environmental information represents information on surroundings of the  
vehicle at present.

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17. The vehicle integrated control system according to claim 12, wherein  
said environmental information represents information on surroundings of the  
vehicle in future.

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18. The vehicle integrated control system according to claim 12, wherein  
said environmental information represents information on an  
acceleration/deceleration state of said vehicle.

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19. The vehicle integrated control system according to claim 12, wherein  
said environmental information represents information sensed by a navigation  
device.

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20. The vehicle integrated control system according to claim 12, wherein  
said environmental information represents information sensed by a radar device.

21. The vehicle integrated control system according to any one of claims 12 to  
19, wherein  
said manipulation request is obtained by sensing an operated amount as to an

accelerator manipulation and a brake manipulation by a driver.

22. The vehicle integrated control system according to any one of claims 12 to 19, wherein

5       said manipulation request is obtained by sensing an operated amount as to an accelerator manipulation, a brake manipulation, and a transmission manipulation by a driver.